TARGET: STROKE℠

TIME LOST IS BRAIN LOST.™

TARGET: STROKE CAMPAIGN MANUAL

American Heart Association® | American Stroke Association®
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INTRODUCTION

Welcome to the Target: Stroke. The purpose of this manual is to provide participants with the guideline recommendations, evidence-based strategies, and supporting tools necessary to reduce door-to-needle times for intravenous rt-PA in eligible patients with acute ischemic stroke. The manual also details the processes for creating an environment for change and implementing these focused strategies.

The Target: Stroke materials are intended as a resource.

- Target Stroke Overview
- Project Support
- Recommended strategies
- Creating Your Team
- Facilitating Change
- Action Plan
- Tool Kit
- Data Monitoring and Feedback

IMPROVING STROKE OUTCOMES

Current guidelines for the management of patients with acute ischemic stroke published by the American Heart Association/American Stroke Association include specific recommendations for the administration of intravenous recombinant tissue plasminogen activator (rt-PA)

Despite its effectiveness in improving neurological outcomes, many patients with ischemic stroke are not treated with rt-PA, because they arrive late or because of delays in assessment/administration of intravenous rt-PA
Earlier administration of intravenous rt-PA after the onset of stroke symptoms is associated with greater functional recovery

One of the potential approaches to increase treatment opportunities and improve stroke outcomes is to provide this treatment in a more timely fashion after patient arrival (reduce the door to needle time for IV rt-PA)

TARGET: STROKE OVERVIEW

Target: Stroke is a national quality improvement initiative of the AHA/ASA to improve the care of stroke. One component of this initiative focuses on improving on the timeliness of administration of IV rt-PA to eligible patients. This initiative is intended to build on the success of GWTG-Stroke, Brain Attack Coalition, and Mission: Lifeline.

WHY JOIN TARGET: STROKE

Target: Stroke focuses on hospitals that provide IV rt-PA for eligible patients with acute ischemic stroke. The Target: Stroke initiative aims to provide all GWTG-stroke participating hospitals with the best practice strategies, supporting tools and educational resources necessary to achieve door to needle times of 60 minutes or less.

All Get With The Guidelines-Stroke hospitals that enroll in Target: Stroke and meet the campaign goal will be included in a rolling honor roll on the Target: Stroke website. Let the AHA/ASA recognize and help promote the good work your hospital is doing.

TARGET: STROKE LAUNCH CAMPAIGN

The aim is to provide IV rt-PA to eligible patients with acute ischemic stroke in a timely fashion.

The goal set for Target; Stroke is to achieve a door to needle (DTN) time within 60 minutes in at least 50% of ischemic stroke patients treated with IV rt-PA

CURRENT AHA/ASA GUIDELINE RECOMMENDATIONS

Intravenous rt-PA for acute ischemic stroke represents one of the few therapies demonstrated to improve clinical outcomes. The current evidenced-based guideline recommended use of intravenous rt-PA is as follows:

Intravenous rt-PA is recommended for selected patients who may be treated within 3 hours of onset of ischemic stroke (Class I Recommendation, Level of Evidence A).

Patients who are eligible for treatment with rt-PA within 3 hours of onset of stroke should be treated as recommended in the 2007 Guidelines.

Although a longer time window for treatment with rt-PA has been tested formally, delays in evaluation and initiation of therapy should be avoided, because the opportunity for improvement is greater with earlier treatment.

rt-PA should be administered to eligible patients who can be treated in the time period of 3 to 4.5 hours after stroke (Class I Recommendation, Level of Evidence B).

Additional guideline recommendations:

EDs should establish standard operating procedures and protocols to triage stroke patients expeditiously (Class I, Level of Evidence B).

Standard procedures and protocols should be established for benchmarking time to evaluate and treat eligible stroke patients with rt-PA expeditiously (Class I, Level of Evidence B).

Target treatment with rt-PA should be within 1 hour of the patient's arrival in the ED (Class I, Level of Evidence A).

Eligible patients can be treated between the 3- to 4.5-hour window when evaluated carefully for exclusions to treatment (Class I, Level of Evidence B).

Comprehensive overview of nursing and interdisciplinary care of the acute ischemic stroke patient: a scientific statement from the American Heart. Association. Stroke 2009;40;2911-2944

BENEFITS OF TIMELY REPERFUSION IN ISCHEMIC STROKE

The NINDS rt-PA Stroke Study demonstrated among 624 patients with ischemic stroke treated with placebo or rt-PA (0.9 mg/kg IV, maximum 90 mg) within 3 hours of symptom onset that favorable outcomes were achieved in 31% to 50% of patients treated with rt-PA, as compared with 20% to 38% of patients given placebo at 3 months. The benefit was similar 1 year after stroke.

Prior studies demonstrate that time to treatment with IV rt-PA is an important determinant of clinical outcomes in acute ischemic stroke. Pooled data from 6 randomized placebo-controlled trials of IV rt-PA were analyzed. Treatment was started within 360 min of onset of stroke in 2775 patients randomly allocated to rt-PA or placebo. The odds of a favorable 3-month outcome increased as onset to treatment decreased (p=0.005). Odds were 2.8 (95% CI 1.8-4.5) for 0-90 min, 1.6 (1.1-2.2) for 91-180 min, 1.4 (1.1-1.9) for 181-270 min, and 1.2 (0.9-1.5) for 271-360 min in favor of the rt-PA group. This study demonstrates that the sooner that IV rt-PA is given to stroke patients, the greater the benefit, especially if started within 90 minutes of symptom onset

Hacke, W., G. Donnan, et al. Association of outcome with early stroke treatment: pooled analysis of ATLANTIS, ECASS, and NINDS rt-PA stroke trials. Lancet 2004;363:768-74.

AN OPPORTUNITY TO IMPROVE STROKE CARE

Despite the clinical trial evidence for better functional outcomes with early treatment with IV rt-PA and guideline recommendations, there remain a substantial portion of patients where treatment is delayed. A recent analysis of door to needle times in GWTG-Stroke participating hospitals in 2009 showed that only 27.4% of patients treated with IV rt-PA had door to needle times within 60 minutes. This suggests that there are substantial opportunities to improve the timeliness of reperfusion therapy. However, certain hospitals within GWTG-Stroke were able to provide IV rt-PA within 60 minutes for the majority of their ischemic stroke patients. As such, the goal for Target: Stroke is an achievable benchmark though concerted and targeted efforts by participating hospitals.

TARGET: STROKE BEST PRACTICE STRATEGIES

Target: Stroke advocates the adoption of these 10 best practice strategies for reducing door-to-needle times in acute ischemic stroke. The 10 key strategies are:

01 **Advance Hospital Notification by EMS:** EMS providers should, when feasible, provide early notification to the receiving hospital when stroke is recognized in the field. Advance notification of patient arrival by EMS can shorten time to CT and improve the timeliness of treatment with thrombolysis.

02 **Rapid Triage Protocol and Stroke Team Notification:** Acute triage protocols facilitate the timely recognition of stroke and reduce time to treatment. Acute stroke teams enhance stroke care and should be activated as soon as the stroke patient is identified in the emergency department or after notification from pre-hospital personnel.

03 **Single Call Activation System:** A single call should activate the entire stroke team. A single-call activation system for the stroke team is defined here as a system in which the emergency department calls a central page operator, who then simultaneously pages the entire stroke team, including notification for stroke protocol imaging.

04 **Stroke Tools:** A Stroke Toolkit containing clinical decision support, stroke specific order sets, guidelines, hospital specific algorithms, critical pathways, NIH Stroke Scale, and other stroke tools should be available and utilized for each patient.

05 **Rapid Acquisition and Interpretation of Brain Imaging:** It is essential to initiate a CT scan (or MRI) within 25 minutes of arrival and complete interpretation of the CT scan within 45 minutes of arrival to exclude intracranial hemorrhage prior to administration of IV rt-PA.

06 **Rapid Laboratory Testing (Including point of Care Testing if indicated):** For patients in whom coagulation parameters should be assessed because of suspicion of coagulopathy, INR/PTT results should be available as quickly

as possible and no later than 45 minutes after ED arrival. If standard STAT laboratory turnaround times cannot meet this target, point of care INR testing in the Emergency Department can provide the data in the needed timeframe.

07 **Mix rt-PA Medication Ahead of Time:** A useful strategy is to mix drug and set up the bolus dose and one-hour infusion pump as soon as a patient is recognized as a possible rt-PA candidate, even before brain imaging. Early preparation allows rt-PA infusion to begin as soon as the medical decision to treat is made. Some drug manufacturers have policies to replace, free of charge, medications that are mixed but not given in time-critical emergency situations like this. Check with your hospital pharmacy for the proper procedures to allow you to use this strategy to shorten time to treatment without financial risk.

08 **Rapid Access to Intravenous rt-PA:** Once eligibility has been determined and intracranial hemorrhage has been excluded, IV rt-PA should be promptly administered. tPA should be readily available in the emergency department or CT scanner (if CT scanner is not located in the ED). Dosing charts and standardized order sets can also facilitate timely administration.

09 **Team-Based Approach:** The team approach based on standardized stroke pathways and protocols has proven to be effective in reducing time to treatment in stroke. An interdisciplinary collaborative team is also essential for successful stroke performance improvement efforts. The team should frequently meet to review your hospital's process and make recommendations for improvement.

10 **Prompt Data Feedback:** Accurately measuring and tracking your hospital's door-to-needle times equips the stroke team to identify areas for improvement and take appropriate action. A data monitoring and feedback system includes the use of the GWTG-Stroke PMT and creating a process for providing timely feedback on a case by case basis and in hospital aggregate. This system helps identify specific delays, set targets, and monitor progress on a case by case basis.

KEY TIME INTERVALS

The Target: Stroke Goal is to achieve a door-to-needle time within 60 minutes from ischemic stroke patient arrival.

The time interval goals are:

(a) perform an initial patient evaluation within 10 minutes of arrival in the emergency department

(b) notify the stroke team within 15 minutes of arrival

(c) initiate a CT scan within 25 minutes of arrival

(d) interpret the CT scan within 45 minutes of arrival

(e) ensure a door-to-needle time for IV rt-PA within 60 minutes from arrival

STEPS TO FACILITATE CHANGE

01 Organize stroke team with focused goal to improve portion of eligible ischemic stroke patients receiving IV rt-PA in a timely fashion (DTN ≤ 60 minutes)

02 Implement Target: Stroke Best Practice Strategies

03 Utilize GWTG-Stroke clinical decision support tools and evidence based strategies for IV rt-PA

04 Participate in the Target: Stroke community of hospitals

05 Track progress to goal using GWTG-Stroke PMT quality measures

TARGET: STROKE RESOURCES

01 Target: Stroke Best Practice Strategies

02 Customizable implementation tools, strategies and systems

03 Guideline based algorithms, order sets, dosing charts

04 Educational programs via webinar series

05 Get With The Guidelines-Stroke community of hospitals

06 Online exchange forums to share best practices, challenges, and successes

EXPECTATIONS FOR TARGET: STROKE HOSPITALS

The expectations for hospital participating in Target: Stroke include the following:

- Active participation to achieve the Target: Stroke goal
- Assemble dedicated Target: Stroke Improvement Team
- Implement Target: Stroke Improvement Best Practices
- Utilized Target: Stroke tools
- Track progress to achieving the Target: Stroke Goal using the GWTG-Stroke PMT reporting functions
- Share insights, experiences, and success

BENEFITS TO TARGET: STROKE PARTICIPANTS

There are a number of potential benefits for participating in Target: Stroke:

- Access to world-class experts and a curriculum on timely and effective acute stroke care
- Access to best practice strategies and successful efforts to improve acute stroke care and meet goals
- Online forums to exchange knowledge and improve performance
- Customizable strategies and tools
- Recognition for your hospital's stroke care